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ABSTRACT

For over 15 years, Tennessee's Chattanooga State Technical Community College has been offering non-traditional, distance education to reach "niches" of students who would otherwise find it difficult to attain a college education. Begun in 1979 with a laboratory-based independent study program offering a mix of purchased and locally-developed courses, the distance program has since broadened to include an Instructional Television Fixed Service system, videocassettes mailed to students' homes, and courses via computer and the World Wide Web. In fall 1996, 326 students were taking courses via the distance program only, representing 1,320 credit hours the college would not have otherwise had. The students served fall into five main niches. Handicapped students use course material in their homes, coming to campus to be tested or making arrangements with staff administers to takes tests at home. Power line maintenance technicians scattered in small groups throughout six states can take a five-course sequence in their own locales. Emergency service personnel receive 1 year of credit for their experience and then take an additional year of coursework through distance learning. A course has also been designed for truckers so that they may watch video courses in their sleepers, take the exams on their own, and develop a business plan using a workbook. Finally, a course in digital circuits was developed for industrial maintenance workers in small companies. (HAA)

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Overcoming Barriers for "Niche" Learners Through Distance Learning

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What do truckers, disabled students, emergency service personnel, power line maintenance workers and laborers in small companies have in common? They fit into "niches" which make getting a college education in traditional ways difficult to achieve. They are also some of the students that are currently being reached by Chattanooga State Technical Community College's Distance Learning Program.

Brief History of Chattanooga State's Distance Learning Program

Chattanooga State has been offering non-traditional education for over 15 years. Begun as a lab-based independent study program offering a mix of pre-produced, licensed telecourses and "home-grown" courses in 1979, the program took an off-campus direction with the construction of an Instructional Television Fixed Service (ITFS) system in 1985. Courses were also broadcast via the local PBS station as well. In 1989, the decision was made to move the program from a campus-based venue to a true distance learning program serving students in their homes through videocassettes mailed to them. At that point, enrollments began to skyrocket, and the trend has continued to this date. In 1993 courses via computer and the World Wide Web were added to the mix, and courses delivered via wireless cable will be added within the 1996/97 academic year. In the fall semester of 1996 over 1000 students enrolled in 1406 courses, with over 1300 enrollments in the videocassette courses.

At the present time, 326 of the students are taking only courses through the program. That is, they are not enrolled in courses on any of Chattanooga State's four campuses. They represent 1320 student credit hours which the college would not have otherwise. The remaining students are enrolled in at least one distance learning course and at least one course on one of the campuses. Of the 326 who are taking only distance learning courses, a cluster of them live some 250 miles from the campus, and others live as far away as Rhode Island, Florida, Illinois, and Washington, DC.

"Niche" One: Handicapped Students

How does the college serve these students? Let's look at each of the "niche" groups mentioned above. Perhaps the easiest group to work with are the handicapped students. At this point, the students served by the program have mainly needed extra time for taking tests or the use of an adaptive device of some kind. They are able to use the course materials in their homes either

through videocassettes or through computer-mediated instruction. When these students need to be tested, they are usually able to come to campus to take their tests in whatever fashion meets their needs. If they need to do their exams orally, the Disability Services staff administer them. If they cannot sit for an extended time period, the exams are broken up into smaller increments that may be taken in more than one sitting. In some cases, the students have been allowed to do required proctored work at a library or another school near them. In at least two cases, the Distance Learning staff have actually gone to the student's home to administer the tests.

"Niche" Two: Power Line Maintenance Technicians

What about the power line maintenance workers? These men are scattered in small groups throughout the six states served by the Tennessee Valley Authority, a large regional utility company. Because TVA wanted these personnel to have extensive training in Forestry and because it was not feasible for them to come together for extended periods for this training, the college developed a five-course sequence which could be completed in the workers' locales. The program combined texts, videotaped lectures, tests, and "hands-on" labs which required the students to complete a wide variety of activities ranging from making extensive and detailed leaf/fruit/twig collections to performing a timber cruise, analyzing treatments for diseased trees and designing a plan to control erosion in deforested areas. Exams have been proctored by the men's supervisors. The initial group consisted of 20 men, of whom 12 will receive their certificates in May. Another 10-15 have taken at least one course in the sequence. Since all of the men could be folded into one class section taught by one instructor, it became economically feasible for the college to offer this training, As a result of the success of this effort, the college and the Tennessee Valley Authority are exploring other potential partnerships through distance learning.

"Niche" Three: Emergency Service Personnel

Perhaps the most promising group the college has been working with through distance learning is emergency services personnel. Within the next year an entire degree in Emergency Services Management and Supervision should be available. . The degree will be aimed at practicing Emergency Medical Technicians and Firefighters. By presenting their national certification documents, these workers will receive one year's credit for their experience and then take an additional year of course work through distance learning. Because personnel who work in these fields typically work such unusual schedules, going to traditional classes is often simply impossible. Being able to take their courses via videotape and on-line allows them to do the work on their own schedules and in their own location. The most distant learners in the Chattanooga State program are enrolled in this program. Interestingly, one of the two major instructors for this program lives 150 miles from the campus, and, so far, no problems have arisen because of that fact.

"Niche" Four: Truckers

By far the most challenging group to serve are the truckers, since they are not in any location for any concentrated time. At this point only a pilot group of nine men and women have attempted to take an Introduction to Business course, the initial offering in a four-course technical certificate program. Since nearly all the big rigs have television sets in the "sleeper" and since the drivers are required to take mandatory breaks or wait at loading docks to load and unload, the Vice President of Driver Services felt that these employees could use these "down times" to further their education. The course was designed so that the drivers could take the exams on their own (the tests only counted a small percentage of the grade), but the essential core of the course was the development of a business plan using a step-by-step approach spelled out in a worktext. Two of the drivers, a husband-wife team, began the course with the goal of actually starting a business.

Through what they learned in the course, they decided that they were not ready at this time. Another husband-wife team, however, decided that they were ready to start their own business as a result of the course. At the end of the course, seven of the nine driver/students had successfully completed the course and plan to take more courses in the future.

"Niche" Five: Industrial Maintenance Workers in Small Companies

Finally, what about training workers in manufacturing plants? Chattanooga State has taken a very proactive approach here. A small grant from the Sloan Foundation provided the impetus to develop asynchronous teaching/learning techniques for workers in small manufacturing firms who have agreed to partner with the college. As a result of the grant, the program has developed a course in Digital Circuits which brings together a very broad mix of media and activities. First, an instructor who regularly teaches the course in a traditional setting agreed to videotape his lectures and also an approach to solving critical problems. Another instructor developed videotaped orientations to the laboratories. Computer exercises and homework problems to be solved on line were also developed, and a computer simulation requiring students to construct circuits on a simulated breadboard were purchased. After completing the on-line labs, students will come to campus twice during the semester for "confirmation" labs using actual digital circuit devices.

As a result of this grant and of the tremendous activity of the college's Business and Community Development Center staff, a new Associate's degree in Industrial Maintenance Technology has been proposed. The unique features of this degree are that workers will be able to receive video and computer materials at the work site and receive "hands-on" training from an itinerant instructor who will work with them on a weekly basis on machinery at the company site. This combination will allow workers doing the same general jobs in several companies to be combined together to make a course section while also providing company-specific experiences supporting the general principles covered in the mediated materials. While this new approach to training is just beginning, the response of companies in Chattanooga State's service area has been very positive, especially among those located at some distance from the college. These companies have been effectively locked out of college-level training because they cannot afford to pay for a traditional class for a limited number of workers in their location. This new pathway to training offers a very cost-effective solution to the companies and a new market for the college. While this methodology is too new to provide any clear-cut results, it appears to be a risk worth taking.

But Is This Type of Training Valid? Is It Cost-effective?

As to the validity of this type of training, the best indicator is the success rate for students in the program overall. For the past four years students have achieved a course completion rate of 60-70 per cent across all distance learning courses. Of those who have completed courses, the passing rate has been between 70-80 per cent. Moreover, the success of students who have taken as many as 14 to 15 Distance Learning courses out of an average of 20-23 courses required for a degree points to the fact that these learners have received the foundation knowledge and skills to succeed in subsequent courses.

Perhaps the question arises, "How can the college afford to risk time and resources on what appear to be such small groups of students?" The answer is that the Distance Learning Program has been so successful overall that even if these risks do not pay off immediately, the program's cost-to-benefit ratio will still be positive. At this point the program returns three times the benefits compared to the costs. Also, the college is beginning to partner with other institutions to produce materials for these programs. We believe that this kind of arrangement promises a win-win

situation for all concerned, and we believe that such endeavors are truly making college accessible to those who might not be able to reach their educational goals otherwise.